

### **REMARKS**

Claims 1-20 are pending. In a Non-Final Office Action mailed on May 13, 2004, the Examiner rejected each of these claims. The Examiner objected to claims 15 and 16 under 37 CFR 1.75(c). The Examiner rejected claims 4, 13 and 20 pursuant to 35 U.S.C. §112, first paragraph. Claims 8 and 9 were rejected under 35 U.S.C. §112, second paragraph, as well. In addition, the Examiner rejected claims 1-20 pursuant to 35 U.S.C. §103(a). Applicant believes all currently pending claims to be in condition for allowance.

### **Claim Objections**

The Examiner objected to claims 15 and 16. Applicant hereby cancels each of these claims.

### **Claim Rejections - 35 U.S.C. §112**

The Examiner rejected claims 4, 13 and 20 under 35 U.S.C. §112, first paragraph, as failing to comply with the enablement requirement. Specifically, the Examiner contends that the specification does not describe in such a way as to enable one of ordinary skill in the art to make and/or use the invention. Claims 4 and 13 each have the limitation that the "rectifier convert said reference signal to a digital signal." Similarly, claim 20 recites the step of "rectifying the reference signal into a digital signal." Applicant disagrees with this statement. Indeed, the specification states as follow:

The voltage from the alternating current generally ranges from 12 volts to 24 volts. Because the circuitry of control unit 18 operates with digital signals of about 5 volts, reference signal 46 should be obtained prior to rectification by the vehicle electrical system and rectified separately to about 5 volts. As seen in Figure 2, the air induction system includes rectifier 48 to convert the alternating

current of reference signal 46 from alternator 24 into digital signal 50 of about 5 volts. Rectifier 48 may be a diode, such as a voltage diode.

[Patent application, p.4]. This disclosure is sufficiently enabling to one of ordinary skill in the art. Indeed, in the Examiner's rejection of claim 20, the Examiner stated:

To the extent it was not explicitly shown, it would have been obvious to one of ordinary skill in the art at the time of the invention to convert the alternator reference signal in the combination of Tanaka and Ross to a digital signal for the purpose of compatibility between the analog reference signal and the control unit, which was a digital processor.

[Non-Final Office Final (5/13/04), p.7]. Based on the same reasoning, it is certainly within the skill of one of ordinary skill in the art, as the Examiner notes, for an analog signal to be converted to a digital signal. Therefore, the rejection of claims 4, 13 and 20 is improper.

The Examiner further rejected claims 9 and 18 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Applicant has amended the application in the manner suggested by the Examiner. Therefore, the rejection has been overcome.

#### **Claim Rejections - 35 U.S.C. §103**

The Examiner rejected claims 1, 19 and 20 under 35 U.S.C. §103(a) as being unpatentable over *Tanaka, et al.*, U.S. Patent 5, 692,052 (hereafter referenced as *Tanaka*) in view of *Ross, et al.*, U.S. Patent 5, 568,557 (hereafter referenced as *Ross*). Applicant disagrees with the basis for this rejection. Specifically, the combination of *Tanaka* with *Ross* is improper because *Tanaka* teaches away from its combination with *Ross*.

As noted by *Tanaka*, a purpose of this reference is “to provide an intake sound control apparatus which can control intake sound of an engine over an entire range of engine rotation.” [*Tanaka*, column 1, ll. 30-35]. This purpose is accomplished in *Tanaka* by an engine rotating speed sensor that “samples the intake sound information due to the noise of the engine.” A controller then generates a signal having a frequency corresponding to a desired frequency component based on this sample intake sound information. Controller then phase controls and amplitude controls a generated signal so that the speaker generates the control sound. In this way, the intake sound of the engine is controlled over the entire rotating speed range. [See, *Tanaka*, column 5, ll. 9-21]. The importance of examining engine rotating speed is further illustrated by the following passage from *Tanaka*:

The effect of a changing engine rotating speed is reduced and the tracking of the engine rotating speed is maintained by the active noise control system of the present invention. The active noise control attains a finer control over changes in engine rotating speed due to the interpolating of control values. Furthermore, the present invention reduce the burden on the control unit by reducing the number of times the control amounts are calculated.

[*Tanaka*, column 6, ll. 37-44].

Accordingly, it is a necessary aspect of the invention to track engine rotating speed rather than the speed of the alternator as the Examiner suggests. The use of an engine speed signal, as a reference, is critical to the invention of *Tanaka*. One of ordinary skill in the art would not look to *Ross* for the alternator as a reference signal, not only because *Ross* involves an aircraft engine, but because *Tanaka* makes an engine speed sensor a critical aspect of its invention. Therefore, the combination is improper and claims 1 and its dependents, claims 2-9, and claims 19 and its dependent, claim 20, stand in condition for allowance.

With respect to claim 3, this claim requires, “a rectifier to rectify said reference signal.” The Examiner rejected this claim based on the combination of *Tanaka*, *Ross* and *Perreault, et al.* In so doing, the Examiner acknowledges that *Tanaka* fails to specifically teach rectifying the alternating current from an alternator. None of the references cited by the Examiner describe this specific limitation. Instead, the Examiner merely presumes that one of ordinary skill in the art would modify the combination of *Tanaka*, *Ross* and *Perreault, et al.* to include a rectifier, “for the purpose of supplying a direct current (DC) signal representing the magnitude of the engine intake noise to a control unit and controlling the noise.” This motivation is not found in any of the references. Indeed, as noted by the MPEP:

The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination.

[MPEP 2143.01]. Because the cited references do not suggest the desirability for this combination, claim 3 and its dependents, claims 4-5, stand in condition for allowance.

With respect to claim 9, this claim requires, “said speaker is at least partially disposed in said mouth.” The Examiner rejected this claim based on the combination of *Tanaka* in view of *Ross* and further in view of *McLean*, U.S. Patent No. 6,084,971 (hereafter referenced as *McLean*). The Examiner contends that it would be obvious to make this combination “for the purpose of radiating the noise canceling signal where the noise strongly emanates from the mouth of an air induction system.” [Non-Final Office Action (5/13/04), p. 13]. Again, none of the references suggest the desirability for the combination. Indeed, as shown in Figure 15 of *Tanaka*, speaker 56A is located away from intake opening 72. Therefore, there would be no need for radiating the noise

canceling signal at the mouth of the air induction system. Also, *Ross* does not even have an air induction body and therefore has no need for the placement of a speaker disposed about the mouth of the air induction body. Accordingly, the motivation for the combination is lacking. Claim 9 is therefore in condition for allowance.

The Examiner rejected claim 10 under 35 U.S.C. §103(a) as being unpatentable over *Tanaka* in view of *Ross* and further in view of *Yuan*. Because the combination of *Tanaka* and *Ross* is improper as explained above, claim 10 and its dependents, claims 11-14, 17-18, stand in condition for allowance.

With respect to claim 12, this claim requires, "a rectifier to rectify said reference signal." Again, as explained above, the combination of references do not teach the specific feature of rectifying an alternating current from the alternator. Also, the motivation for this rejection, as explained in the arguments concerning claim 3, is absent. Therefore, claim 12 is separately allowable.

With respect to claim 18, this claim is also separately allowable. Claim 18 requires, "said speaker is at least partially disposed in said mouth." Again, there is no suggestion of the desirability of the combination of references cited by the Examiner. For this reason, claim 18 is in condition for allowance.

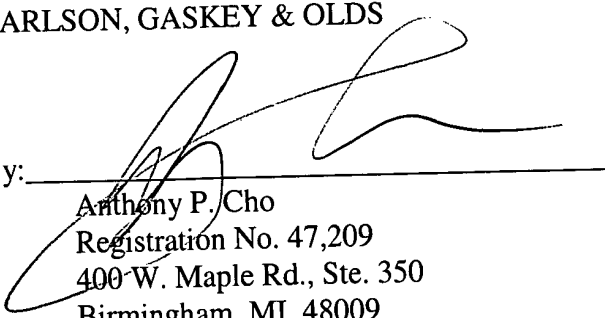
For the foregoing reasons, claims 1-14 and 17-20, stand in condition for allowance.

Applicant believes that no additional fees are necessary, however, the Commissioner is authorized to charge Deposit Account No. 50-1482 in the name of Carlson, Gaskey & Olds for any additional fees or credit the account for any overpayment.

Respectfully submitted,

CARLSON, GASKEY & OLDS

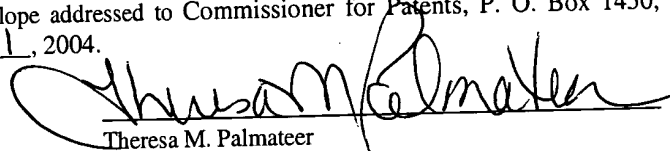
By: \_\_\_\_\_

  
Anthony P. Cho  
Registration No. 47,209  
400 W. Maple Rd., Ste. 350  
Birmingham, MI 48009  
(248) 988-8360

Dated: August 11, 2004

**CERTIFICATE OF MAILING**

I hereby certify that the enclosed Response is being deposited with the United States Postal Service as First Class Mail, postage prepaid, in an envelope addressed to Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450 on August 11, 2004.

  
Theresa M. Palmateer

N:\Clients\SIEMENS\AIR FUEL MODULES\IP00285\Patent\Response 6-04.doc